

Environmental Labeling and Motivation Crowding Out

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Preview

- Motivation
- Policy Background
- Objectives
- Prior Research
- Economic Model
- Methods & Procedures
- Policy Implications

Motivation

- Environmental Labeling in the US
 - Apparent preference for programs with both *public* and *private* benefits
 - Appeal to “narrow self-interest”
- Cracks in the economic foundation?
 - “Altruism”
 - Motivation Crowding Out (MCO)
- Might MCO affect consumer response to environmental labeling?

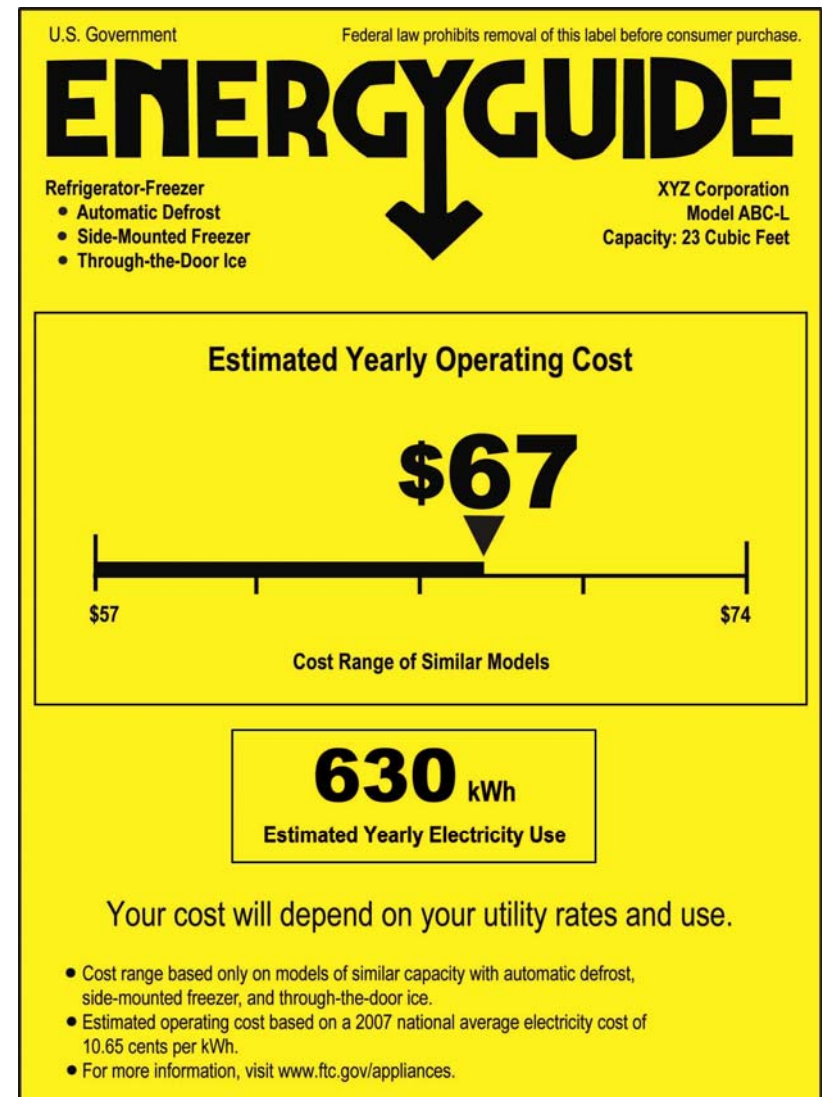
Third-Party Environmental Labeling

Program Type	Information Type	Basis for Participation
Seal-of-Approval	Positive	Voluntary
Single Attribute Certification	Positive	Voluntary
Report Card	Neutral	Voluntary
Information Disclosure	Neutral	Mandatory
Hazard of Warning Label	Negative	Mandatory

Source: USEPA (1993)

Energy Guide

- Information Disclosure
- Home appliances and energy-using equipment
- Since 1980
- FTC/DOE



ENERGY STAR®

- Seal-of-Approval or Single Attribute Certification
- Appliances, light bulbs, buildings, etc.
- Since 1992
- EPA/DOE



“Money Isn’t All You’re Saving”

“Save Energy, Save Money, Protect the Environment”

Green Power Partnership

- Seal or Certification
- Organizations consuming specified percentage of energy from certain renewable sources
- 2001
- EPA



Objectives

- Analyze influence of extrinsic (energy cost savings) and intrinsic (helping the environment) incentives on willingness to pay for consumer products
 - Evidence of MCO?
- Analyze influence of other factors on willingness to pay for environmentally labeled consumer products
 - Program characteristics
 - Demographics
 - Attitudes and Opinions

Prior Research

- Evidence that environmental labeling programs are influencing consumer behavior
 - Opinion/Recognition Surveys
 - Stated Preference Surveys
 - Revealed Preference Analyses
 - E.g., Bjørner, Hansen and Russell (2004)

Prior Research

- Energy Efficiency and Green Power Labeling
 - Energy crisis of the 1970's
 - Identification of the “efficiency gap”
 - ENERGY STAR
 - Green Power

Prior Research

- Prosocial Behavior and MCO
 - MCO
 - Psychological Literature
 - Deci and Ryan (1985); Deci (1971)
 - Experimental Evidence
 - Deci, Koestner, and Ryan (1999)
 - Field work
 - Frey and Jegen, 2001
 - Prosocial behavior more generally
 - Meier (2006)
 - Bénabou and Tirole (2006)

Economic Model

$$\max v_z \cdot z_i + v_Y \cdot Y_i - p_i + x[\gamma_z E(v_z | z_i, Y_i) - \gamma_Y E(v_Y | z_i, Y_i)]$$

- Adapted from Bénabou and Tirole (2006)

- Where:

z = public attributes (intrinsic motivation)

Y = private attributes (extrinsic motivation)

v_z, v_Y represent consumer preferences

p = product price

x = visibility of salience of the choice

Methods & Procedures

- Conjoint Analysis
 - Hypothetical market or stated preference
 - Meant to replicate purchase decision

If you were shopping for a side-by-side refrigerator/freezer for your home and these were your only options, which would you choose?			
Brand Size Icemaker Warranty Energy Usage Price	<input type="radio"/> Frigidaire 21.7 cubic feet Icemaker in freezer 2 year warranty ENERGY STAR \$1199	<input type="radio"/> GE 25.3 cubic feet Icemaker in freezer 2 year warranty Meets Federal Requirements \$1479	<input type="radio"/> Amana 23.9 cubic feet In-door dispenser 1 year warranty ENERGY STAR \$1349

Methods & Procedures

- Additional Survey Questions
 - Debriefing
 - Attitudinal
 - Demographic
- Survey Implementation
 - Computerized
 - Online

Methods & Procedures

- Product Selection Criteria
 - Energy consumption
 - Familiarity, buying experience
 - Adequately described with limited number of attributes
 - Limited importance of aesthetic, visual qualities
 - Accessibility of product information

Methods & Procedures

- Refrigerator Attribute Identification and Selection
 - Price
 - Brand
 - Finish
 - Size
 - Through-the-door water/ice
 - Noise Control
 - Humidity Control
 - Drawers (number)
 - Shelving (type)
 - Water Filtration
 - Length of warranty

Methods & Procedures

- Environmental Labels (Survey Versions)
 - ENERGY STAR
 - High and low private benefit
 - Green Power Partners
 - Energy Savers

ENERGY STAR Example:

Another factor that you may consider is whether or not the refrigerator has been awarded an ENERGY STAR® label. All refrigerators sold in the US are required to meet federal guidelines limiting their energy consumption. To be awarded the ENERGY STAR label, the refrigerator must consume at least 20% less energy than the federal guidelines. As a result, an ENERGY STAR refrigerator will, on average, reduce a household's electricity bill by \$14 per year and reduce the emission of carbon dioxide associated with energy production by about 195 pounds per year. Carbon dioxide is a greenhouse gas that contributes to global climate change.

Methods and Procedures

- Four different survey versions
- Test of the MCO Hypothesis
 - WTP for ENERGY STAR with high cost savings > WTP for Green Power Partners or Energy Saver > WTP for ENERGY STAR with low cost savings
- Concerns
 - Equivalence of public benefits

Methods & Procedures

- Focus Group Analysis
 - Product and non-environmental attribute selection
 - Environmental attributes
 - Survey instrument

Policy Implications

- Relevance of public and private dimensions of labeling programs
- Influence of other program characteristics on consumer response
- Influence of demographic, attitudinal and opinion factors on consumer response
- Usefulness of conjoint analysis in evaluating labeling programs/attributes
- Empirical test of the objection that market mechanisms will lead to “moral ambiguity”